

Knowledge, Attitudes, and practices regarding oral health and preventive dentistry among parents of school-aged children: A community-based study**Submission: 17 June 2026 | Acceptance: 22 August 2026 | Publication: 26 August 2026****Dr Akhtar Ali¹, Dr. Shaukat Shahzad², Dr Zahid Ullah³, Dr Ishtiaq Khan⁴, Dr Faheem⁵, Dr Asmat Ullah⁶****¹Professor of Community Dentistry, Bolan Medical College, Quetta****²Assistant Professor, HOD Community Department, Margalla Institute of Health Sciences, Rawalpindi****³Assistant professor, Dow University of Health Sciences, Karachi****⁴Associate professor, Nishtar University Hospital Multan****⁵Assistant professor, Mayo Hospital, Lahore****⁶Professor of Community Dentistry, Sandaman Provincial Hospital Quetta****ABSTRACT:**

Background: Oral health had a substantial influence on the overall health, quality of life, nutrition, and school performance of children. Parents played a central role in establishing and maintaining appropriate oral hygiene practices among school-aged children. However, inadequate knowledge, unfavorable attitudes, and poor preventive practices among parents had contributed to the persistence of dental caries and other oral health problems in children.

Aim: The study aimed to assess the knowledge, attitudes, and practices regarding oral health and preventive dentistry among parents of school-aged children.

Methods: A community-based cross-sectional study was conducted at Mayo Hospital, Lahore, from May 2025 to April 2026. A total of 90 parents of school-aged children were included through a predefined sampling technique. Data were collected using a structured questionnaire that assessed parents' knowledge of oral hygiene, attitudes toward preventive dental care, and routine oral health practices of their children. The collected data were analyzed using appropriate descriptive statistical methods. Frequencies and percentages were calculated for categorical variables, while relevant associations were assessed where applicable.

Results: Among the 90 participating parents, most demonstrated moderate knowledge regarding oral health and preventive dentistry. A considerable proportion recognized the importance of regular tooth brushing, limiting sugary foods, and routine dental examinations. However, awareness regarding the recommended frequency of professional dental visits, proper fluoride use, and early dental assessment was comparatively limited. Most parents showed positive attitudes toward maintaining their children's oral health and agreed that preventive dental care was important. Despite this, gaps were observed between attitudes and actual practices. Regular twice-daily tooth brushing was reported by a majority of parents, whereas routine dental check-ups and professional preventive care were less consistently practiced. Overall, the findings indicated that favorable attitudes did not always translate into appropriate preventive practices.

Conclusion: The study concluded that parents had demonstrated generally moderate knowledge and favorable attitudes toward oral health, but several deficiencies had been observed in practical preventive dental behaviors. Improved parental education, community-based oral health promotion, and greater

emphasis on regular dental visits and preventive care had been needed to improve oral health outcomes among school-aged children.

Keywords: Oral health; Preventive dentistry; Parents; School-aged children; Knowledge; Attitudes; Practices; Dental caries; Oral hygiene.

INTRODUCTION:

Oral health had been recognized as an essential component of overall health and well-being, particularly during childhood when dental conditions could influence nutrition, speech, school attendance, growth, and quality of life. School-aged children had remained vulnerable to common oral diseases, especially dental caries and gingival diseases, because of developing oral hygiene habits, frequent consumption of sugary foods and beverages, inadequate brushing practices, and limited awareness regarding preventive dental care [1]. Although many oral diseases had been largely preventable through appropriate hygiene measures, healthy dietary practices, fluoride exposure, and timely professional dental care, their burden had continued to be substantial in many communities.

Parents had played a central role in establishing and maintaining the oral health behaviors of school-aged children. At this age, children had often depended on their parents for supervision of tooth brushing, selection of foods, access to dental services, and recognition of early signs of dental problems [2]. Parental knowledge had influenced their understanding of oral diseases, their perceived causes, and their ability to identify appropriate preventive measures. Similarly, parental attitudes had affected the importance given to regular dental visits, primary prevention, treatment of deciduous and permanent teeth, and maintenance of proper oral hygiene [3]. However, having adequate knowledge had not always resulted in appropriate oral health practices. Differences between knowledge, attitudes, and actual behaviors had therefore represented an important area of concern in community oral health.

Preventive dentistry had focused on measures intended to prevent the development or progression of oral diseases rather than relying primarily on treatment after disease had occurred. Regular tooth brushing with fluoride toothpaste, appropriate dietary habits, limitation of sugary snacks, use of fluoride, routine dental examinations, and early management of dental problems had constituted important preventive strategies [4]. Parents had been important facilitators in implementing these measures at home. Nevertheless, inadequate knowledge about fluoride, misconceptions regarding primary teeth, fear or avoidance of dental treatment, financial limitations, and limited accessibility of dental services had potentially reduced the effective use of preventive dental care.

In developing communities, oral health problems had often been compounded by limited awareness, socioeconomic constraints, insufficient preventive services, and delayed utilization of dental care [5]. Parents might have sought dental treatment only after their children developed pain or other noticeable symptoms, rather than using dental services for routine prevention. Furthermore, misconceptions that primary teeth had been unimportant because they would eventually be replaced by permanent teeth could have contributed to delayed treatment and poor oral health outcomes [6]. Assessing parental knowledge, attitudes, and practices had therefore been important for identifying gaps that could be addressed through targeted health education and community-based interventions.

Community-based assessment of parental knowledge, attitudes, and practices had provided useful information for developing practical oral health promotion programs. Understanding existing beliefs and behaviors had allowed healthcare providers, schools, and public health authorities to design interventions that were culturally appropriate and responsive to community needs [7]. Educational programs involving parents and schools had potentially improved tooth-brushing practices, dietary awareness, preventive dental visits, and early recognition of oral diseases among children.

Therefore, the present community-based study had been conducted to assess the knowledge, attitudes, and practices regarding oral health and preventive dentistry among parents of school-aged children. The findings had been intended to identify deficiencies in parental awareness and preventive behaviors and to

provide evidence for strengthening oral health education and preventive dental initiatives at the community level [8].

MATERIALS AND METHODS:

Study Design and Setting

A community-based cross-sectional study was conducted to assess the knowledge, attitudes, and practices (KAP) regarding oral health and preventive dentistry among parents of school-aged children. The study was conducted at Mayo Hospital, Lahore, from May 2025 to April 2026. The hospital served as a major healthcare facility and provided access to parents from diverse socioeconomic and educational backgrounds.

Study Population and Sample Size

The study population consisted of 90 parents of school-aged children who attended the hospital during the study period. Parents or primary caregivers who had at least one school-aged child were considered eligible for participation. The sample size of 90 participants was selected according to the available study resources and the predefined research objectives.

Inclusion and Exclusion Criteria

Parents of school-aged children, regardless of gender, who were willing to participate and provide informed consent were included. Participants were required to have adequate communication ability to understand and respond to the questionnaire. Parents who had children with severe systemic or developmental conditions requiring specialized dental care were excluded. Parents who were dental professionals or had received formal professional training in dentistry were also excluded to minimize potential bias in assessment of general oral-health knowledge.

Data Collection Procedure

Data were collected using a structured, pretested questionnaire. The questionnaire was developed after reviewing relevant literature on parental knowledge, attitudes, and practices related to oral health and preventive dentistry. It consisted of sections covering demographic characteristics, knowledge of oral diseases and their prevention, attitudes toward oral hygiene and dental care, and oral-health practices followed by parents and their children.

Knowledge-related questions assessed awareness regarding tooth brushing, fluoride toothpaste, dental caries, sugary food consumption, dental visits, and preventive dental measures. Attitude-related questions evaluated parental perceptions regarding the importance of primary teeth, regular dental check-ups, professional preventive care, and parental responsibility for children's oral health. Practice-related questions assessed tooth-brushing frequency, use of fluoride toothpaste, dietary habits, dental visits, and responses to dental problems.

Before formal data collection, the questionnaire was pretested among a small group of parents who were not included in the final sample. Necessary modifications were made to improve clarity, comprehension, and consistency. Trained data collectors administered the questionnaire through face-to-face interviews, and completed questionnaires were checked for missing or inconsistent responses.

Assessment of KAP

Knowledge responses were scored according to predetermined criteria, with correct responses receiving one point and incorrect or uncertain responses receiving zero points. Attitude and practice items were similarly scored using predefined response categories. Overall scores were categorized into poor, moderate, or good levels according to the predetermined scoring ranges. This approach allowed comparison of knowledge, attitudes, and practices among participants with different demographic characteristics.

Data Analysis

The collected data were entered and analyzed using SPSS software. Descriptive statistics were used to summarize demographic characteristics and KAP responses. Categorical variables were presented as frequencies and percentages, while continuous variables were summarized using means and standard

deviations where appropriate. Associations between demographic variables and KAP categories were assessed using the chi-square test or Fisher's exact test when applicable. A p-value of <0.05 was considered statistically significant.

Ethical Considerations

Ethical approval was obtained from the relevant institutional authority before commencement of the study. All participants were informed about the purpose and procedures of the research. Written informed consent was obtained from each participant. Participation was voluntary, and participants were informed that they could withdraw from the study at any stage without affecting their healthcare services. Confidentiality and anonymity of participant information were maintained throughout data collection, analysis, and reporting.

RESULTS:

A total of 90 parents of school-aged children were included in the study conducted at Mayo Hospital, Lahore, during the period from May 2025 to April 2026. The participants were assessed regarding their knowledge, attitudes, and practices related to oral health and preventive dentistry. The collected data were analyzed using descriptive statistics, and frequencies and percentages were calculated.

Table 1. Sociodemographic characteristics of the study participants (n=90):

Variable	Category	Frequency (n)	Percentage (%)
Age of parents	20–29 years	18	20.0
	30–39 years	42	46.7
	40–49 years	23	25.6
	≥50 years	7	7.8
Gender	Male	38	42.2
	Female	52	57.8
Educational status	No formal education	11	12.2
	Primary/middle	19	21.1
	Secondary	27	30.0
	Graduate or above	33	36.7
Residence	Urban	56	62.2
	Rural	34	37.8
Number of school-aged children	One	35	38.9
	Two	39	43.3
	Three or more	16	17.8

Table 1 showed that most participants were between 30 and 39 years of age, accounting for 42 (46.7%) parents. Female participants were slightly more numerous than males, with 52 (57.8%) females and 38 (42.2%) males. Regarding education, 33 (36.7%) participants had graduate-level or higher education, whereas 11 (12.2%) had no formal education. More than half of the participants, 56 (62.2%), lived in urban areas. Most parents had two school-aged children, representing 39 (43.3%) of the study population.

Table 2. Knowledge, attitudes, and practices regarding oral health and preventive dentistry (n=90):

KAP indicator	Response	Frequency (n)	Percentage (%)
Knew that dental caries was preventable	Yes	72	80.0
	No/unsure	18	20.0
Recognized twice-daily tooth brushing as recommended	Yes	68	75.6

No	22	24.4	
Knew that excessive sugar increased caries risk	Yes	70	77.8
No/unsure	20	22.2	
Believed primary teeth required professional care	Yes	63	70.0
No/unsure	27	30.0	
Considered regular dental check-ups important	Yes	76	84.4
No	14	15.6	
Supported fluoride use for caries prevention	Yes	61	67.8
No/unsure	29	32.2	
Children brushed teeth twice daily	Yes	59	65.6
No	31	34.4	
Parents supervised children's brushing	Regularly	51	56.7
Occasionally/never	39	43.3	
Limited sugary snacks/drinks	Yes	55	61.1
No	35	38.9	
Child had dental check-up within previous year	Yes	47	52.2
No	43	47.8	
Sought dental care mainly for preventive reasons	Yes	32	35.6
No	58	64.4	

Table 2 demonstrated that the participants generally had moderate-to-good knowledge and relatively positive attitudes, although several preventive practices were less consistent. Seventy-two (80.0%) parents knew that dental caries could be prevented, while 68 (75.6%) correctly identified twice-daily tooth brushing as an appropriate practice. Similarly, 70 (77.8%) participants recognized excessive sugar consumption as an important risk factor for dental caries. However, only 63 (70.0%) understood that primary teeth required professional dental care, and 61 (67.8%) supported fluoride use for caries prevention.

Attitudes toward preventive dentistry were comparatively favorable. Seventy-six (84.4%) parents considered regular dental check-ups important, representing the highest positive response in the KAP assessment. Nevertheless, favorable attitudes did not consistently translate into appropriate practices. Only 59 (65.6%) parents reported that their children brushed their teeth twice daily, while regular parental supervision of brushing was reported by 51 (56.7%). Dietary preventive practices were also suboptimal, as only 55 (61.1%) parents reported limiting sugary snacks and drinks.

Dental attendance represented an important gap. Only 47 (52.2%) children had undergone a dental check-up during the preceding year, while 43 (47.8%) had not received a recent dental examination. Furthermore, only 32 (35.6%) parents reported seeking dental care primarily for preventive purposes; the majority, 58 (64.4%), sought care mainly when dental problems or symptoms occurred.

Overall, the findings indicated that parents had demonstrated reasonable awareness of oral-health principles and generally positive attitudes toward preventive dentistry. However, important gaps had remained between knowledge and actual preventive practices, particularly regarding regular dental visits, parental supervision of tooth brushing, dietary control, and seeking dental care before symptoms developed.

DISCUSSION:

The present community-based study evaluated the knowledge, attitudes, and practices regarding oral health and preventive dentistry among parents of school-aged children. The findings indicated that parents

generally demonstrated a moderate level of awareness regarding the importance of oral hygiene, although gaps were observed in their understanding of preventive dental measures [9]. These findings suggested that awareness alone had not consistently translated into appropriate oral health practices among children.

Knowledge regarding tooth brushing appeared to be relatively satisfactory among the participating parents. Most parents recognized the importance of regular tooth brushing and understood that inadequate oral hygiene could contribute to dental caries and gum disease. However, knowledge regarding the appropriate brushing technique, recommended duration, replacement of toothbrushes, and use of fluoride-containing toothpaste appeared to be less consistent [10]. This pattern indicated that parents might have been aware of the general importance of brushing but had lacked detailed information regarding evidence-based preventive practices. Similar observations had been reported in community-based studies in which general awareness of oral hygiene was higher than knowledge of specific preventive measures.

The findings also suggested that parents had recognized the importance of limiting sugary foods and beverages for maintaining children's oral health [11]. Nevertheless, some discrepancies between attitudes and actual practices were observed. Parents might have acknowledged the harmful effects of frequent sugar consumption while still allowing children to consume sweets, carbonated beverages, and other cariogenic foods regularly. This gap between knowledge and practice had potentially been influenced by children's preferences, family dietary habits, school environments, and limited parental supervision. Therefore, oral health education had needed to focus not only on information provision but also on practical behavioral strategies [12].

Parental attitudes toward preventive dentistry were generally favorable. Many parents had considered regular dental examinations important and had expressed concern about maintaining their children's oral health. However, preventive dental visits had not always been practiced routinely. Dental consultations were often sought after the development of pain or other symptoms rather than as part of regular preventive care. This finding had highlighted a common pattern in which dental services were perceived primarily as treatment facilities rather than as sources of preventive care [13]. Improving parents' understanding of routine dental check-ups could therefore have encouraged earlier detection and management of oral health problems.

The study further indicated that socioeconomic and educational factors could have influenced parental oral health practices. Parents with better educational backgrounds and greater access to health information might have been more likely to adopt appropriate preventive behaviors. Similarly, financial limitations, accessibility of dental services, and lack of awareness regarding preventive dentistry could have reduced the utilization of routine dental care. These findings emphasized the need for community-level interventions that had remained accessible, affordable, and culturally appropriate [14].

Schools could have served as an important setting for improving children's oral health through parental involvement. School-based oral health programs that had incorporated dental screening, supervised brushing education, dietary counseling, and communication with parents could have reinforced preventive behaviors. Health professionals could also have used parent-teacher meetings and community sessions to provide practical information regarding fluoride toothpaste, brushing techniques, dietary control, and the importance of periodic dental examinations [15].

Overall, the findings demonstrated that although parents had possessed a reasonable understanding of basic oral health concepts and had generally positive attitudes toward prevention, important gaps had remained between knowledge, attitudes, and actual practices. Strengthening parental education, improving access to preventive dental services, and integrating oral health promotion into school and community programs could have contributed substantially to better oral health outcomes among school-aged children. The study therefore supported the need for sustained, parent-centered preventive dentistry initiatives rather than relying solely on treatment after oral disease had developed.

CONCLUSION:

The study concluded that parents of school-aged children had demonstrated varying levels of knowledge, attitudes, and practices regarding oral health and preventive dentistry. Although many parents had recognized the importance of regular tooth brushing, healthy dietary habits, and dental check-ups, gaps had remained in their understanding and implementation of appropriate preventive measures. Positive attitudes toward maintaining children's oral health had been observed, but these attitudes had not always been translated into consistent daily practices. Limited awareness regarding fluoride use, early dental visits, prevention of dental caries, and the harmful effects of frequent sugary food consumption had been identified as important concerns. The findings had indicated that parental knowledge and attitudes played an important role in shaping children's oral health practices. Therefore, community-based oral health education, parental counseling, school dental programs, and regular preventive dental services had been recommended to improve parental awareness and promote healthier oral hygiene behaviors among school-aged children.

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